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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,642

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Ryouichi Takayama

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EXAMINER

GORDON, BRYAN P

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,642	Applicant(s) TAKAYAMA ET AL.	
	Examiner BRYAN P. GORDON	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 12-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 12-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first metal layer having a striped or meshed pattern (See Figure 3A-3C) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Asai (US PN 4,449,107).

5. Considering claim 1, Asai (Figure 16) teaches a piezoelectric substrate (5); a comb-shaped electrode (6) formed on a first principal face of the piezoelectric substrate; and a supporting substrate (4A) bonded to a second principal face of the piezoelectric substrate, wherein the second principal face of the piezoelectric substrate is bonded to the supporting substrate at room temperature via a metal layer (15) absent heating the piezoelectric substrate and the supporting structure.

6. Considering claim 5, Asai teaches the supporting substrate employs a substrate made of sapphire (col. 9 lines 10-12).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asai (US PN 4,449,107).

11. Asai discloses the claimed invention except for the metal layer employs gold. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use gold for the metal layer, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

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12. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asai (US PN 4,449,107) and in view of Nakatani (US PN 6,798,121).

13. Considering claim 2, Asai does not teach a through-hole and an electric conductor provided inside the through-hole.

In the same field of endeavor, Nakatani (Figure 7) teaches a through-hole (611) and electric conductor provided inside the through-hole for the benefit of connecting the electrodes together to power the device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a through-hole and electric conductor provided inside the through-hole with Asai's device for the benefit described above.

14. Considering claim 3, Nakatani teaches the metal layer is removed the metal in part (metal layer shaped into a stripped or meshed pattern, col. 1 lines 62-67).

15. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asai (US PN 4,449,107) and in view of Onishi (US PN 6,426,583).

16. Considering claim 4, Asai does not teach the substrate employs rotated Y-cut lithium tantalate.

In the same field of endeavor, Onishi teaches the substrate employs rotated Y-cut lithium tantalate (col. 1 lines 40-44). It is well known in the art that SAW devices comprises Y-cut substrates and therefore it would have been obvious to combine Onishi Y-cut substrate with Asai's device.

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17. Claims 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asai (US PN 4,449,107), in view of Nakatani (US PN 6,798,121) and in view of Lee (PG Pub 20040146409).

18. Considering claim 12, Asai in view of Nakatani teaches the claimed invention as described above, except for the heat dissipating layer.

In the same field of endeavor, Lee teaches the heat dissipating layer (paragraph 0054) for the benefit of diffusing the heat away from the substrate.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a heat dissipating layer with the combination above for the benefit described above.

19. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asai (US PN 4,449,107) and in view of Kim (PG Pub 20040232843).

20. Considering claim 13, Asai teaches the claimed invention as described above, except for the first metal having a striped pattern or a meshed pattern and a second metal layer formed on the supporting substrate.

In the same field of endeavor, Kim (Figure 5) teaches the first metal (121a) having a striped pattern or a meshed pattern and a second metal layer (122a) formed on the supporting substrate (123) for the benefit of not having an excessive load voltage to the device which could damage the device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include first metal having a striped pattern or a meshed

pattern and a second metal layer formed on the supporting substrate with Asai's device for the benefit described above.

Response to Arguments

21. Applicant's arguments filed 18 June 2008 have been fully considered but they are not persuasive. The added limitation of bonding the piezoelectric substrate to the supporting substrate at **room temperature** and **absent heating the piezoelectric substrate and the supporting substrate** is not germane to the patentability of the device itself. Therefore, this limitation has not been given patentable weight.

Regarding claim 2, the examiner does not rely on Nakatani to teach a metal layer between the piezoelectric substrate and a supporting substrate that is what Asai is used for. The examiner uses Nakatani to teach a through-hole and electric conductor provided inside the through-hole as discussed above.

Conclusion

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

23. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRYAN P. GORDON whose telephone number is (571)272-5394. The examiner can normally be reached on Monday-Thursday 8:00-5:30, Friday 7:30-4:00.

25. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

26. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/B. P. G./
Examiner, Art Unit 2834
/Bryan P Gordon/

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/Darren Schuberg/

Supervisory Patent Examiner, Art Unit 2834